IN THE CLAIMS

The following listing of claims is provided in accordance with 37 C.F.R. §1.121:

1.   (currently amended)   A method for reducing artifacts in image data generated by a computed tomography system, the artifacts being due to the presence of a high density object in a subject of interest, the method comprising:

receiving measured sinogram data from the computed tomography system, the sinogram data representative of a plurality of measured sinogram elements;

reconstructing the measured sinogram data to generate initial reconstructed image data;

identifying a trace of the high density object in the measured sinogram data;

identifying a region of interest in the initial reconstructed image data;

identifying an optimization criterion based upon the region of interest, in an image domain;

iteratively adjusting the measured sinogram elements at least in the trace of the high density object in the measured sinogram data based upon the optimization criterion in the image domain, to generate corrected sinogram data; and

reconstructing the corrected sinogram data to generate improved reconstructed image data.

2.   (original)   The method of claim 1, wherein the initial reconstructed image data is generated using a filtered back projection technique.

3.   (original)   The method of claim 1 further comprising assigning a reliability measure to each sinogram element, and wherein iteratively adjusting the measured sinogram data is based upon the reliability measure.

4.   (original)   The method of claim 3, wherein identifying a trace of the high density object further comprises:

segmenting the high density object from the initial reconstructed image data;

reprojecting the segmented high density object from the initial reconstructed image data; and

assigning the reliability measure to each sinogram element in the measured sinogram data relative to its position within the trace of the segmented high density object.

5.   (original)   The method of claim 3, wherein identifying the trace of the high density object further comprises assigning the reliability measure to each sinogram element in the measured sinogram data based on a pre-defined threshold value.

6.   (original)   The method of claim 3, wherein identifying the trace of the high density object further comprises assigning the reliability measure to each sinogram element in the measured sinogram data based on an attenuation value of each sinogram element.

7.   (original)   The method of claim 1, wherein identifying a region of interest is based on an attenuation value associated with the region of interest.

8.   (currently amended)   The method of claim 1, wherein identifying a region of interest is based on a uniformity value associated with the region of interest.

9.   (original)   The method of claim 1, wherein identifying a region of interest is based on the relative position of the region of interest with respect to the high density object.

10. (original) The method of claim 1, wherein the optimization criterion comprises determining an optimal attenuation value associated with the region of interest.

11. (original) The method of claim 1, wherein the optimization criterion comprises determining an optimal uniformity value associated with the region of interest.

12. (original) The method of claim 1, wherein the optimization criterion comprises minimizing angular variations associated with the region of interest based on the relative position of the region of interest with respect to the high density object.

13. (original) The method of claim 1, wherein reconstructing the corrected sinogram data to generate improved reconstructed image data comprises using a filtered back projection technique.

14. (currently amended) A method for reducing artifacts in image data generated by a computed tomography system, the artifacts being due to the presence of a high density object in a subject of interest, the method comprising:

receiving measured sinogram data from the computed tomography system, the sinogram data representative of a plurality of measured sinogram elements;

reconstructing the measured sinogram data to generate initial reconstructed image data;

identifying a trace of the high density object in the measured sinogram data;

iteratively adjusting the measured sinogram elements at least in the trace of the high density object in the measured sinogram data, to generate corrected sinogram data; and

reconstructing the corrected sinogram data to generate improved reconstructed image data.

15. (original) The method of claim 14, wherein identifying a trace of the high density object further comprises

segmenting the high density object from the initial reconstructed image data;

reprojecting the segmented high density object from the initial reconstructed image data; and

assigning a reliability measure to each sinogram element in the measured sinogram data relative to its position within the trace of the segmented high density object.

16. (original) The method of claim 14, wherein identifying a trace of the high density object further comprises assigning a reliability measure to each sinogram element in the measured sinogram data based on a pre-defined threshold value.

17. (original) The method of claim 14, wherein identifying a trace of the high density object further comprises assigning a reliability measure to each sinogram element in the measured sinogram data based on an attenuation value of each sinogram element.

18. (currently amended) A computed tomography system for reducing artifacts in image data, the artifacts being due to the presence of a high density object in a subject of interest, the system comprising:

an x-ray source configured to project an x-ray beam from a plurality of positions through the subject of interest;

a detector configured to produce a plurality of electrical signals corresponding to the x-ray beam; and

a processor configured to process the plurality of electrical signals to generate measured sinogram data, the sinogram data representative of a plurality of measured sinogram elements, wherein the processor is further configured to reconstruct the measured sinogram data to generate initial reconstructed image data; identify a trace of the high

density object in the measured sinogram data; identify a region of interest in the initial reconstructed image data; identify an optimization criterion based upon the region of interest, in an image domain; iteratively adjust the measured sinogram elements at least in the trace of the high density object in the measured sinogram based upon the optimization criterion in the image domain, to generate corrected sinogram data; and reconstruct the corrected sinogram data to generate improved reconstructed image data.

      19.   (currently amended)   At least one computer-readable medium storing computer instructions for instructing a computer system to reduce artifacts in image data generated by a computed tomography system, the artifacts being due to the presence of a high density object in a subject of interest, the computer instructions comprising:

      receiving measured sinogram data from the computed tomography system, the sinogram data representative of a plurality of measured sinogram elements;

      reconstructing the measured sinogram data to generate initial reconstructed image data;

      identifying a trace of the high density object in the measured sinogram data;

      identifying a region of interest in the initial reconstructed image data;

      identifying an optimization criterion based upon the region of interest, in an image domain;

      iteratively adjusting the measured sinogram elements at least in the trace of the high density object in the measured sinogram data based upon the optimization criterion in the image domain, to generate corrected sinogram data; and

      reconstructing the corrected sinogram data to generate improved reconstructed image data.

      20.   (currently amended)   At least one computer-readable medium storing computer instructions for instructing a computer system to reduce artifacts in image data generated by a computed tomography system, the artifacts being due to the presence of a high density object in a subject of interest, the computer instructions comprising:

receiving measured sinogram data from the computed tomography system, the sinogram data representative of a plurality of <u>measured</u> sinogram elements;

reconstructing the measured sinogram data to generate initial reconstructed image data;

identifying a trace of the high density object in the measured sinogram data;

iteratively adjusting the <u>measured</u> sinogram elements <u>at least</u> in the trace of the high density object in the measured sinogram data to generate corrected sinogram data; and

reconstructing the corrected sinogram data to generate improved reconstructed image data.

21.   (currently amended)   A computed tomography system for reducing artifacts in image data, the artifacts being due to the presence of a high density object in a subject of interest, the system comprising:

means for processing a plurality of electrical signals corresponding to an x-ray beam generated by the computed tomography system to generate measured sinogram data, the sinogram data representative of a plurality of <u>measured</u> sinogram elements, wherein the processing further comprises reconstructing the measured sinogram data to generate initial reconstructed image data; identify a trace of the high density object in the measured sinogram data; identify a region of interest in the initial reconstructed image data; identify an optimization criterion based upon the region of interest<u>, in an image domain</u>; iteratively adjust the <u>measured</u> sinogram elements <u>at least</u> in the trace of the high density object in the measured sinogram data based upon the optimization criterion <u>in the image domain</u>, to generate corrected sinogram data; and reconstruct the corrected sinogram data to generate improved reconstructed image data.

22.   (currently amended)   A method for reducing artifacts in image data generated by a computed tomography system, the artifacts being due to the presence of objects in a subject of interest, the method comprising:

receiving measured sinogram data from the computed tomography system, the sinogram data representative of a plurality of <u>measured</u> sinogram elements;

reconstructing the measured sinogram data to generate initial reconstructed image data;

identifying a sinogram region of interest in the measured sinogram data;

identifying an image region of interest in the initial reconstructed image data;

identifying an optimization criterion based upon the image region of interest<u>, in an image domain</u>;

iteratively adjusting <u>the measured sinogram elements in at least</u> the sinogram region of interest based upon the optimization criterion <u>in the image domain</u>, to generate corrected sinogram data; and

reconstructing the corrected sinogram data to generate improved reconstructed image data.